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PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Koji KASUGA

Confirmation No. 8831

Serial No. 10/087,787

Group 2872

Filed March 5, 2002

LAMP UNIT, LIGHT GUIDE PLATE, LIQUID CRYSTAL DISPLAY, AND
METHOD FOR ASSEMBLING THEM

RECEIVED
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TECHNOLOGY CENTER 2872

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents

Washington, D.C. 20231

Sir:

In compliance with Rules 1.97 and 1.98, and in fulfillment of the duty of disclosure under Rule 1.56, the accompanying documents, copies of which are attached to this statement, are made of record on the enclosed sheet.

A concise explanation of the relevance of these items is that these references were cited by the Taiwanese Patent Office in the corresponding Taiwanese Application. A copy of the Taiwanese Official Action in which they were cited is attached hereto. An English translation is also attached hereto.

Under the provisions of 37 CFR 1.97(e), the undersigned hereby certifies that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign Patent Office in a

S.N. 10/087,787

counterpart foreign application not more than three months
prior to the filing of this Statement.

Respectfully submitted,

YOUNG & THOMPSON

By



Robert J. Patch
Attorney for Applicant
Registration No. 17,355
745 South 23rd Street
Arlington, VA 22202
Telephone: 703/521-2297

May 14, 2003

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guide ; a lamp for emitting illumination from one side of the light guide ; and a reflector for collecting light from the lamp on the light guide . The reflector has a polygonal cross section, a thickness greater than the thickness of the light guide , and is open to only the thickness of the light guide on the light guide side of the reflector.

專利範圍: 1. A liquid crystal display device comprising: a liquid crystal panel unit; a backlight unit for illuminating the liquid crystal panel unit from a back side of the liquid crystal panel unit, said backlight unit including a light guide plate having a front surface supporting said liquid crystal panel unit and including protruding ribs for positioning said liquid crystal panel unit on said light guide plate , said ribs being located at corners of said light guide plate , each rib having an "L" shape on the front surface of said light guide plate , a thickness, and a planar rear side; and a box-like frame in which said liquid crystal panel unit and said backlight unit are held.

美國專利分類號: 349/058 ;349/065

國際專利分類號: G02F-001/1333 ;G02F-001/1335

引用專利: 5134505; 5486942; 5548430; 5550657; 5654779; 5694190; 5739879

參考國外文獻: 6174935 06/94 JPX \$\$\$;

7294921 11/95 JPX \$\$\$;

862430 03/96 JPX \$\$\$

優先權項:

審查委員: Malinowski; Walter J.

代理人: Leydig; Voit & Mayer; Ltd.

說明書: 6219116

☒ 第5/19筆 of US patent 2000

專利編號: 6181071

專利名稱: Display panel apparatus having reduced capacitive coupling

公告日: 20010130

專利申請日: 19980227

專利申請號: 31609

發明人: Yuuki; Akimasa;

Umesaki; Mitsumasa;

Matsumoto; Sadayuki;

Kumagai; Takashi;

Kawabe; Shin

專利權人: Mitsubishi Denki Kabushiki Kaisha

摘要: A display panel with a reduced capacitive coupling. The panel includes a transmission type liquid crystal panel. A lamp is provided adjacent at least one side of a light guide plate to guide the light to the crystal panel. A high frequency current supply is used to power the light. A reflective plate encircles the lamp so as to introduce the light to the light guide plate . A housing is made of a thin metal plate . Each portion of the housing is connected with a common electrical potential. Part of the housing extends away from the reflective plate around the lamp or contains an opening in the same location. By this arrangement, the capacitance between the reflective plate and the housing is made smaller thus reducing the leakage current.

專利範圍:

1. A display panel apparatus comprising: a transmission type liquid crystal panel, a lamp provided adjacent to at least one side of a light guide plate for guiding illumination light to

the crystal panel, a high frequency current supply for providing a lighting current to the lamp, a reflective plate provided to encircle the lamp to introduce illumination light of the lamp to the light guide plate, and a housing composed of a metal thin plate, each portion of the housing being connected with a common electric potential, wherein the high frequency current supply comprises a current supply for simultaneously applying alternating positive and negative voltages in antiphase to both ends of the lamp.

美國專利分類號: 315/169.3 ;315/224 ;349/070

國際專利分類號: G02F-001/335 ;H05B-037/02

引用專利: 4682084; 4709188; 5121032; 5182660; 5504605; 5754012; 5789870

優先權項:

審查委員: Vu; David

代理人: Oblon; Spivak; McClelland; Maier & Neustadt; P.C.

說明書: 6181071

第6/19筆 of US patent 2000

專利編號: 6175396

專利名稱: Liquid crystal display module

公告日: 20010116

專利申請日: 19990122

專利申請號: 235575

發明人: Kim; Hee-sun;

Lee; Young-jae;

Lee; Swang-hwan;

Kang; Tae-gil;

Lee; Swang-hee;

Kim; Won-ju

專利權人: Samsung Electronics Co., Ltd.

摘要: A liquid crystal display module in which a series of overlying sheets can be prevented from wrinkling by fixing the sheets to a mold frame using a fixing member such as the positioner and the earth clips without using the fixing tape and the sheets are provided with an appropriate level of thermal expansion space, thereby eliminating wrinkling. As a result, displaying performance of the LCD device can be significantly enhanced.

專利範圍: 1. A liquid crystal display (LCD) module comprising: a mold frame accommodating a light guide plate, a series of overlying sheets and an LCD panel; a lamp disposed in a portion of said mold frame and which emits light to said LCD panel via said light guide plate and sheets; a top chassis enclosing said mold frame; a printed circuit board having an earth terminal and which is electrically connected to said LCD panel and controls a driving state of said LCD panel; and a positioner being erected and inserted between said mold frame and said LCD panel and which fixes said sheets onto said mold frame by perforating said overlying sheets and mold frame which are superposed.

美國專利分類號: 349/058 ;349/061 ;349/065 ;361/681

國際專利分類號: G02F-001/1333 ;G02F-001/1335 ;G06K-001/16

引用專利: 4614406; 6068381; 6091474

優先權項:

4-145485 05/92 JPX \$\$\$;
7253511 10/95 JPX \$\$\$;
WO 93/06504/93 WOX \$\$\$;
WO 95/03502/95 WOX \$\$\$

優先權項: JPX 6-83717 03/31/94

審查委員: Nguyen; Thong;
Cherry; Euncha

代理人: Staas & Halsey; LLP

說明書: 6172809

☐ 第8/19筆 of US patent 2000

專利編號: 6163350

專利名稱: Filter device and backlight device, each filter sheet having only one holding portion which is bonded to a frame member

公告日: 20001219

專利申請日: 19990823

專利申請號: 378920

發明人: Ihara; Masahiro

專利權人: Kabushiki Kaisha Toshiba

摘要: A filter device is mounted in a backlight device for illuminating a transmission type liquid crystal display panel from the rear surface side. The filter device includes a sheet having a polygonal filter portion for imparting predetermined optical characteristics to rays of light emerging from the light exit surface of a light guide and a holding portion extending from one side of the filter portion, a frame member having a polygonal opening portion in correspondence with the filter portion to allow light transmitted through the filter portion of the sheet to pass through, and a double-coated tape for bonding the holding portion of the sheet to the frame member.

專利範圍: 1. A back light device for illuminating a transmission type display panel, comprising: a light source having a polygonal light guide plate including a light exiting surface, a lamp attached to at least one side portion of the light guide plate, and a frame member having a polygonal opening portion for permitting passage of light from the light guide plate and holding the light guide plate; and a plurality of sheets each having a filter portion with optical characteristics and disposed on the light exiting surface of the light source, wherein each of said sheets comprises only one holding portion extending from one side of the filter portion and having a length along the direction of the one side of the filter portion that is shorter than that of the one side of the filter portion, and wherein said back light device further comprises a bonding means for bonding the one holding portion of each of said sheets with the frame member of the light source.

美國專利分類號: 349/058

國際專利分類號: G02F-001/1333

引用專利: 4294517; 4799771; 4963001; 5119204; 5182660; 5307188; 5375005; 5422751; 5432626;
5477423; 5479285; 5486942; 5504605; 5640216; 5668649; 5768095; 5835139; 5838412

參考國外文獻: 5-11264 01/93 JPX \$\$\$

優先權項:

審查委員: Malinowski; Walter J.

代理人: Pillsbury Madison & Sutro LLP

說明書: 6163350

□ 第9/19筆 of US patent 2000

專利編號: 6147725

專利名稱: Liquid crystal panel module with polarization transformation for increased brightness

公告日: 20001114

專利申請日: 19981020

專利申請號: 175542

發明人: Yuuki; Akimasa;
Sasagawa; Tomohiro

專利權人: Mitsubishi Denki Kabushiki Kaisha

摘要: A liquid crystal panel module includes a backlight unit consisting of a light guide plate having a reflecting sheet at a lower face, a lamp for projecting light to one side of the light guide plate, a reflector for condensing the light from the lamp onto the light guide plate, and a liquid crystal panel having a polarizing plate at a lower face and disposed on the backlight unit. Equilateral prisms are located between the light guide plate and reflecting sheet of the backlight unit in a direction parallel to a polarization axis of the polarizing plate of the liquid crystal panel unit. Each of the prisms has a prism angle so that the angle of incidence of the light guided from the lamp into the light guide plate is the Brewster angle of the prisms.

專利範圍: 1. A liquid crystal panel module comprising: a backlight unit including a light guide plate having a first index of refraction, a front surface, a back surface including a plurality of grooves and located opposite the front surface, and a side surface transverse to the front and rear surfaces, a reflecting sheet at the back surface of said light guide plate, a lamp for illuminating the side surface of said light guide plate, and a reflector condensing light radiated from said lamp onto the side surface of said light guide plate; a liquid crystal panel unit arranged opposite the front surface of said light guide plate of said backlight unit and including a polarizing plate having a polarization axis and located on a rear surface of said liquid crystal panel unit opposite the front surface of said light guide plate; and a plurality of equilateral prisms arranged within and filling the grooves in said light guide plate, exposed at the back surface of said light guide plate, and arranged in a direction parallel to the polarization axis of said polarizing plate, each of said plurality of equilateral prisms having a prism angle so that light guided into said light guide plate impinges on a surface of an equilateral prism at the Brewster angle of said equilateral prism, said equilateral prisms having a second index of refraction larger than the first index of refraction of said light guide plate.

美國專利分類號: 349/065 ;349/061 ;349/062 ;349/096 ;385/146 ;362/032

國際專利分類號: G02F-001/335 ;G02B-006/10

引用專利: 5485354; 5555109; 5587816; 5600462; 5627926; 5635278; 5712694; 5838404; 5887964; 5914760; 5926601

參考國外文獻: 421628 04/91 EPX \$\$\$;
0597261 05/94 EPX \$\$\$;
0632229 01/95 EPX \$\$\$;
659024 06/95 EPX \$\$\$;
0730187 09/96 EPX \$\$\$;
5224019 09/93 JPX \$\$\$;
6-160840 06/94 JPX \$\$\$;
7120752 05/95 JPX \$\$\$;

8136733 05/96 JPX \$\$\$;
2272277 05/94 GBX \$\$\$

優先權項:

審查委員: Dudek; James A.;
Chowdhury; Tarifur R.

代理人: Leydig; Voit & Mayer; Ltd.

說明書: 6147725

□ 第10/19筆 of US patent 2000

專利編號: 6123430

專利名稱: Surface light source device of side light type

公告日: 20000926

專利申請日: 19970930

專利申請號: 940374

發明人: Ono; Toshiaki;
Ohkawa; Shingo;
Takashio; Manabu

專利權人: Enplas Corporation

摘要: Local irregularities in luminance are removed from a surface light source device of side light type 20 applied to a liquid crystal display or the like. In assembly, a reflection sheet 4 and a primary light source 23 are mounted on a light guide plate 2, and these components are housed at a predetermined position in a frame 21. The primary light source 23 has a fluorescent lamp 25 and a reflector 26, and supplied illumination light to an end surface (an incidence surface) 2A of the light guide plate 2. The reflector 26 presses the reflection sheet 4 against the light guide plate 2 and supports the reflection sheet. A support member 24 has a claw 24C engageable with a claw 21C of the frame 21. A light absorbable layer 27 is formed on an end portion of the reflection sheet 4. Since the reflection sheet 4 projects toward the primary light source and is pressed against the light guide plate 2 by the reflector 26, there is less quantity of light actually incident onto a lower edge ED, even if the illumination light makes a propagation toward the edge ED. Thus, it is possible to prevent the phenomenon that the edge ED on the side of the reflection sheet 4 is brightly illuminated with illumination light from occurring in the vicinity of the end surface (the incidence surface) 2A of the light guide plate 2 to which the light is supplied.

專利範圍: 1. A surface light source device of side light type including a light guide plate having an incidence surface, an emitting surface and a surface opposite to the emitting surface, and a primary light source to supply light to said incidence surface, comprising: a reflection sheet arranged along said surface opposite to said emitting surface of said light guide plate so that said reflection sheet projections from an edge of said incidence surface within around the edge toward said primary light source without hanging over said incidence surface.

美國專利分類號: 362/031 ;362/026

國際專利分類號: F21V-007/04

引用專利: 5709447; 5735590; 5810464

優先權項:

審查委員: Patel; Nimeshkumar D.;
Hopper; Todd Reed

代理人: Staas & Halsey LLP

檢索策略 \$1 (19筆)(PLATE AND LAMP AND LIGHT GU... ☐ 顯示結果 (自第 1 筆開始)

共 19 筆, 本頁顯示第 11 至 19 筆 每頁 10 筆 ☐ 清除註記 ☐ 開啟選項

☐ 選資料庫 ☐ 檢索畫面 ☐ 顯示簡目 ☐ 首頁 至本頁尾

☐ 第11/19筆 of US patent 2000

專利編號: 6046785

專利名稱: Attachment structure of light guide to frame for liquid crystal display device

公告日: 20000404

專利申請日: 19980416

專利申請號: 60883

發明人: Won; Se Chang

專利權人: LG Electronics Inc.

摘要: A liquid crystal display device includes a frame having a settling portion, a lamp positioned within the frame and near a first side of the frame, a light guide positioned within the frame, wherein a cross-section of the light guide decreases with distance from the lamp, the light guide having a groove facing a second side of the frame, a bracket mounted in the settling portion of the frame and having a protrusion corresponding to the groove.

專利範圍: 1. A liquid crystal display device comprising: a light guide having a first fixing means at a first side; a frame having a second fixing means at an inner side facing the first side of the light guide; and a plate spring bracket having a first portion for mating with the first fixing means, a second portion for mating with the second fixing means, and a third portion for connecting the first portion and the second portion.

美國專利分類號: 349/058 ;349/060 ;349/062 ;349/065

國際專利分類號: G02F-001/1333

引用專利: 4277817; 4789224; 5335100; 5815227

優先權項:

審查委員: Sikes; William L.;
Malinowski; Walter

代理人: Morgan; Lewis & Bockius LLP

說明書: 6046785

☐ 第12/19筆 of US patent 2000

專利編號: 6024463

專利名稱: Surface light source device of side light type with belt-like diffusible area

公告日: 20000215

專利申請日: 19971107

專利申請號: 966451

發明人: Ishikawa; Tsuyoshi;
Sasako; Hiromi

專利權人: Enplas Corporation;
Yasuhiro Koike

摘要: In a surface light source device of side light type applied to a liquid crystal display device, etc., more specifically a surface light source device of side light type having a directivity emitting characteristic, a bright-and-dark-band contrast which is generated in a vicinity of an incidence surface is prevented. In a surface light source device of side light type, light diffusible areas composed on main-and-supplementary diffusible areas are formed on a slanted surface and an emitting surface of a light guide plate having a directivity emitting characteristic. A silver sheet is fixed to a projected portion of a prism sheet along an upper edge, and an illumination light which arrives at the upper edge from a fluorescent lamp is blocked so that the strong brightening of the upper edge is prevented. An illumination light from a lower edge is blocked by a reflector or a frame and reflected diffusively. The light diffusible area may be formed on one of the slanted surface and the emitting surface. Moreover, the light diffusible area may be formed on an additional element such as a reflection sheet.

專利範圍: 1. A surface light source device of side light type comprising: a light guide plate having an incidence surface and major surfaces including an emitting surface and a surface opposite to the emitting surface, the incidence surface running along the major surfaces in an incidence direction; and a rod-type light source arranged along the incidence surface supplying light through the incidence surface, wherein a belt-like light diffusible area preventing a bright-and-dark-band contrast from appearing, is arranged in direct contact with at least one of the major surfaces so as to be parallel to the incidence direction.

美國專利分類號: 362/031 ;362/299 ;362/308

國際專利分類號: F21V-007/04

引用專利: 4277817; 5178447; 5283673; 5392199; 5600455; 5688035; 5788356


參考國外文獻: 7-198956 08/95 JP X00-000

優先權項: JPX 8-329202 11/25/96

審查委員: O'Shea; Sandra;
Honeyman; Marshall

代理人: Staas & Halsey; LLP

說明書: 6024463

 ☐ 第13/19筆 of US patent 1999

專利編號: 5966191

專利名稱: Liquid crystal display device with retained light guide plate

公告日: 19991012

專利申請日: 19980414

專利申請號: 60049

發明人: Lee; Sang-hee

專利權人: Samsung Electronics Co., Ltd.

摘要: A liquid crystal display (LCD) of the type having a mold frame, a back cover and a reflecting sheet and defining, for design margin reasons, a gap between the mold frame and the back cover, wherein means are provided to prevent the reflective sheet from moving through the gap when the LCD is subjected to impact and vibration.

專利範圍:

1. A liquid crystal display having improved resistance to degradation from impact and vibration, said liquid crystal display comprising: a mold frame including at least one guide member, said at least one guide member being formed on an end portion of said mold frame; a prism sheet; a diffusing sheet; a reflecting sheet; a light guide plate ; said prism sheet, said

diffusing sheet, said reflecting sheet, and said light guide plate being positioned within said mold frame, said at least one guide member preventing said sheets and said light guide plate from moving; a lamp assembly mounted in said mold frame; a liquid crystal display panel located on said mold frame; a top chassis which supports said mold frame and said liquid crystal display as a unit; a back cover mounted on a rear surface of said mold frame and defining a gap between said at least one guide member and said back cover; and at least one projecting part formed on said at least one guide member and extending rearwardly therefrom toward said back cover, whereby said projecting part prevents said reflecting sheet from being moved through said gap.

美國專利分類號: 349/058

國際專利分類號: G02F-001/1333

引用專利: 5666172; 5729310; 5815224; 5838400

優先權項:

審查委員: Dudek; James

代理人: Myers Bigel Sibley & Sajovec

說明書: 5966191

□ 第14/19筆 of US patent 1999

專利編號: 5982540

專利名稱: Surface light source device with polarization function

公告日: 19991109

專利申請日: 19950313

專利申請號: 403323

發明人: Koike; Yasuhiro;
Arai; Takayuki

專利權人: Enplas Corporation

摘要: Light is supplied into a light incident surface 2 from a fluorescent lamp L enclosed by a silver foil sheet R, and parallelized illuminating light flux is taken out from a light exit surface 3. On a back surface 4 side of a light flux parallelizer 1, across or without a thin air layer 5, a polarization converter is disposed. The polarization converter reinforces the polarization function of the surface light source device through polarization conversion action accompanying reflection in the prism. At a position confronting the light exit surface 3 across an air layer 7, a polarization separating plate 8 is disposed. At a further outside, across an air layer 9, an exit light direction modifier 10 is disposed. A bright polarized illuminating light flux is emitted from a light exit surface 11. When applied to a backlight of a liquid crystal display, a liquid crystal display panel is disposed at a further outside of the exit light direction modifier 10.

專利範圍: 1. A surface light source device with polarization function comprising: a light flux parallelizer composed of a plate form light scattering light guide having a wedge shaped section, and light feed means disposed at the thicker end side of the light flux parallelizer, and light permeable polarization separating means having reflection characteristic depending on polarization components, being disposed so as to extend along the light exit surface of the light flux parallelizer, wherein the polarization separating means comprises a polarization separating plate having a refractive index in a range of 1.3 to 2.0, and a repetitive slope for approximately satisfying the Brewster's angle condition for the exit direction of the parallel light flux emitted from the light exit surface of the light flux parallelizer is formed on the light incident surface of the polarization separating plate.

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經濟部智慧財產局專利核駁審定書

受文者：日本電氣股份有限公司（代理人：周良謀先生）

地址：新竹市東大路一段一一八號十樓

發文日期：中華民國九十二年二月十九日

發文字號：（九二）智專二（六）01058字

第〇九二二〇一五七〇八〇號

一、申請案號數：〇九一一〇四二二〇

專利分類IPC(7)：... G02F 1/13

二、發明名稱：照明單元、導光板、液晶顯示器及其組裝方法

三、申請人：

名稱：日本電氣股份有限公司

地址：日本

四、專利代理人：

姓名：周良謀先生

地址：新竹市東大路一段一一八號十樓

五、申請日期：九十一年三月五日

六、優先權項目：

1 2001/03/05 日本2001-060239

92. 21
92021256

N/E 090-TW

七、審查人員姓名：王茂齡 委員

八、審定內容：

主文：本案應不予專利。

依據：專利法第二十條第二項。

理由：

(一) 本案「照明單元、導光板、液晶顯示器及其組裝方法」要點在於提供一種液晶顯示器，包含液晶顯示板、照明單元，包含燈具及燈座、導光板及一個框體配合。

(二) 經查LCD中包含了液晶顯示板、照明單元、導光板及框體組合乃是既有且屬於已知公開之技術，如美國專利第USP 6181071、USP 6175396、USP 6163350、USP 6147725、USP 6123430、USP 6046785、USP 5966191等，本案又無呈現其獨立優異之性質以彰顯其進步性，故本案係運用申請前既有之技術或知識，而為熟習該項技術者所能輕易完成，不符法定專利要件。

(三) 檢附前述引證資料摘要(如附件)。

據上論結，本案不符法定專利要件，爰依專利法第二十條第二項，審定如主文。

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局長 蔡練生

依照分層負責規定授權單位主管決行

如不服本審定，得於文到之次日起三十日內，備具再審查理由書一式二份及規費新台幣陸仟元整（專利說明書及圖式合計在五十頁以上者，每五十頁加收新台幣五百元，其不足五十頁者以五十頁計），向本局申請再審查。

TRANSLATION OF REJECTION REASONS

Rejection Reasons:

1. This application "LAMP UNIT, LIGHT GUIDE PLATE, LIQUID CRYSTAL DISPLAY, AND METHOD FOR ASSEMBLING THEM" relates to a liquid crystal display which comprises a liquid crystal display panel, a lamp unit including a lamp and a lamp holder, a light guide plate, and a case assembly.

2. However, it is found that the liquid crystal display which comprises a liquid crystal display panel, a lamp unit, a light guide plate, and a case assembly is conventional and has been disclosed in, for example, US Patent No. 6,181,071, No. 6,175,396, No. 6,163,350, No. 6,147,725, No. 6,123,430, No. 6,046,785, and No. 5,966,191. (hereinafter referred to as the Citations 1, 2, 3, 4, 5, 6 and 7, see Attachments 1, 2, 3, 4, 5, 6 and 7.) This application doesn't present distinguishing and outstanding characteristics to show its inventive step in light of the above citations. Consequently, this application simply utilizes conventional technology known prior to applying for patent, and can be accomplished easily by persons skilled in the art. Thus, this application does not meet the stipulated requirement for patentability

In conclusion, this application does not meet the stipulated requirement for patentability and should be rejected according to Item 2, Article 20 of the Patent Law.